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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,942	06/22/2001	Hayao Watanabe	Q43872	7069

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EXAMINER

TAMAI, KARL I

ART UNIT	PAPER NUMBER
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2834

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/885,942
Filing Date: June 22, 2001
Appellants: WATANABE ET AL.

MAILED

AUG 18 2004

GROUP 2800

09/855,842
Jeffrey A Schmidt
No. 451,574
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 10, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct. The issue 2 is moot because the examiner has withdrawn the 35 USC 102/103 rejection over the AAPA.

(7) *Grouping of Claims*

Appellant's brief includes a statement that the claims do not stand or fall together in regards to each issue on appeal, and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

<u>Patent Number</u>	<u>Inventor</u>	<u>Publication Date</u>
US 2,887,062	Cametti et al.	5/1959
WO 94/23911	Hofeister	10/1994
FR 2527854	Jacquin	12/1983

(10) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claims 31-33 and 37-39 have been rejected under 35 U.S.C. 103. This rejection is set forth in a prior Office Action, mailed on 11/14/2003. The rejections have been repeated below for the convenience of the Board of Appeals and Interferences.

Claims 31-33 and 37-39 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The specification does not contain a full, clear, concise, and exact written description of an encoder as a displacement measuring means. The only disclosure in the specification for an encoder is a comparison with reluctance resolver with the magnetic and optical encoder as recited in col. 14, lines 41-63. The magnetic and optical encoders are not disclosed as part of the invention, and the specification teaches away from the use of the optical and magnetic encoders.

Claims 31, 32, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) and Cametti (US 2,887,062), and Hofmeister (WO 94/23911). AAPA teaches a plurality of actuators with stators hermetically sealed behind non-magnetic material, with roller bearings supporting the rotors. AAPA teaches a reinforcing means for the wall being the portion of the wall which expands radially outward to the coil endturns when the wall is axially outside the air gap between the rotor and stator. The reinforcing wall being the same material as the wall between the rotor and stator. The roller bearings being on opposite sides of the wall between the stator and rotor. AAPA shows but does not describe optical encoders below bearing 219 or teach the sealing wall being non-magnetic metal. Hofmeister shows that the encoders shown in AAPA are optical encoders 13, 14. Cametti teaches the sealing wall and supports being non-magnetic stainless steel. Cametti teaches the partition wall 12 between the supports 8,9 and the rotor 15. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motors of AAPA with the optical encoders of Hofmeister to control the drive motors, and the non-magnetic wall being stainless steel to provide good weld connections when making the hermetic motor.

Claim 33 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) and Cametti and Hofmeister, in further view of Jacquin (FR 2,527,854). AAPA Cametti and Hofmeister teach every aspect of the invention except a magnetic encoder. Jacquin teaches the equivalence of magnetic and optical encoders for controlling motors across a sealed enclosure. It would have

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been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of AAPA, Cametti, and Hofmeister with the magnetic encoder to provide remote commutation of the stator coils which protects the encoder and because it is within the ordinary skill in the art to choose between known equivalents.

(11) *Response to Argument*

ISSUE 1

The Applicant's argument that the specification contains a full, clear, concise, and exact written description of Claims 31-33 and 37-39 is not persuasive. The specification does not disclose magnetic or optical encoders as part of the invention.

The applicant's argument that the specification discloses other suitable methods for measuring the displacement of the motor rotor is not persuasive. The specification does not provide such a description. Particularly, the specification discloses the use of the magnetic and optical encoder as a comparison for why the reluctance resolver is necessary, (see col. 14, lines 38) "Next, the reason why the sealed actuator of the embodiment adopts the variable reluctance resolver..". The specification never discloses that optical or magnetic or any Encoder" as part of the invention. Further teaches away from using magnetic and optical encoders due to large amounts of impurities (col 14, line 59) which causes limited use in a vacuum.

The argument the claims of the parent application include the magnetic and optical encoders is not persuasive. The claim limitation of "a displacement measuring means" cannot read on a magnetic or optical encoder. The specification NEVER states

that optical and magnetic encoders are acceptable for use in the applicant's sealed actuator, it is ONLY used as a comparison with the reluctance resolver.

"A displacement measuring means" is treated as a means plus function claim per 112(6). To interpret this requires (1) identification of the specific structure in the specification which performs the function and then requires (2) determining what one of ordinary skill in the art would have considered to be equivalents of this structure.

(1) In this application the displacement measuring means is identified as a resolver, see page 12 lines 10-12 (embodiment 1), page 23 lines 27-31, and page 26 lines 29-33 all of the original specification of the patent 08/773,180. This is the specifically identified structure of the specification to be used as the displacement measuring means, page 12, line 11.

(2) Next one must determine what may be considered equivalent to this structure. According to applicant's arguments one should consider the optical or electric encoders as equivalents because the specification is not directed to only high vacuum environments.

In support of this argument applicant cites column 5 lines 61-65 which state a sealed actuator is shown. This is not persuasive. Applicant is ignoring column 1 lines 1-10 which clearly identify the intended environment as a sealed actuator for use in an ultra high vacuum environments. Applicant identifies problems with the prior art as lubricants not being proper for high vacuum environments (col 1 line 14-15), bellows, magnetic coupling and fluid coupling systems as all having problems in high vacuum environments (col 1 lines 25-42). Applicant has not identified any problems in prior art

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systems that are not directed to high vacuum environments. One of ordinary skill in the actuator and resolver arts would recognize that the discussion of problems only directed to high vacuum environments demonstrates that applicant's invention is singularly directed to solving this problem. Therefore a proper determination of equivalents would only consider equivalents that work in high vacuum environments.

Applicant has stated in his originally filed specification that encoders of the optic and electric types are particularly unfit for high vacuum environments (col. 14 lines 41-63). One of ordinary skill in the art would not consider optic and electric encoders as proper equivalents in view of applicants express teachings of their incompatibility with applicants intended choice of environment.

The examiner believes the rejection should be maintained because the specification does not contain a full, clear, concise, and exact written description of the encoders being acceptable for use in a sealed actuator, applicant never claimed the encoders in the parent application because it was never intended to be part of the invention, the specification only discusses the encoders as comparison for why the reluctance resolver is necessary.

Drawings:

The objection to the drawings is not an appealable issue. For the record, the examiner maintains that the drawings do not show magnetic and optical encoders.

ISSUE 2

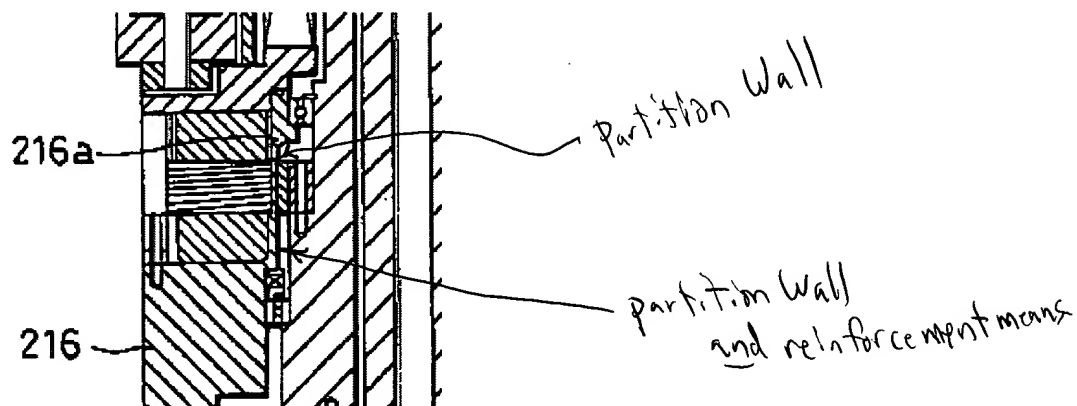
The Applicant's argument that the partition walls must be non-magnetic metal is persuasive because the Japanese references 03-150041, 03-150042 teach the partition wall being non-magnetic metal (specification, col. 3, line 1-2) not the Applicant's Admitted Prior Art as shown in figure 7.

ISSUE 3

The Applicant's argument that the bearings are mounted directly on the partition wall is not persuasive because the partition wall of the AAPA is part of the housing so the bearings are directly mounted on the housing. The Applicant's argument regarding Hofmeister is not persuasive because Hofmeister is relied upon to teach the optical encoders not the position of the bearings.

The Applicant's argument regarding the AAPA is not persuasive. AAPA figure 7 shows the bearings mounted directly on the housing 216 and 216a having bearings mounted directly thereon and having a sealing partition extending therebetween. The Applicant's argument regarding the reinforcement means and the force acting on the partition wall between the rotor and stator are not persuasive because the limitations have not been recited as part of the claimed invention. AAPA clearly shows the bearings mounted directly on the housing on opposite side sides of the seal between the stator laminations and the rotor, as set forth in the claims.

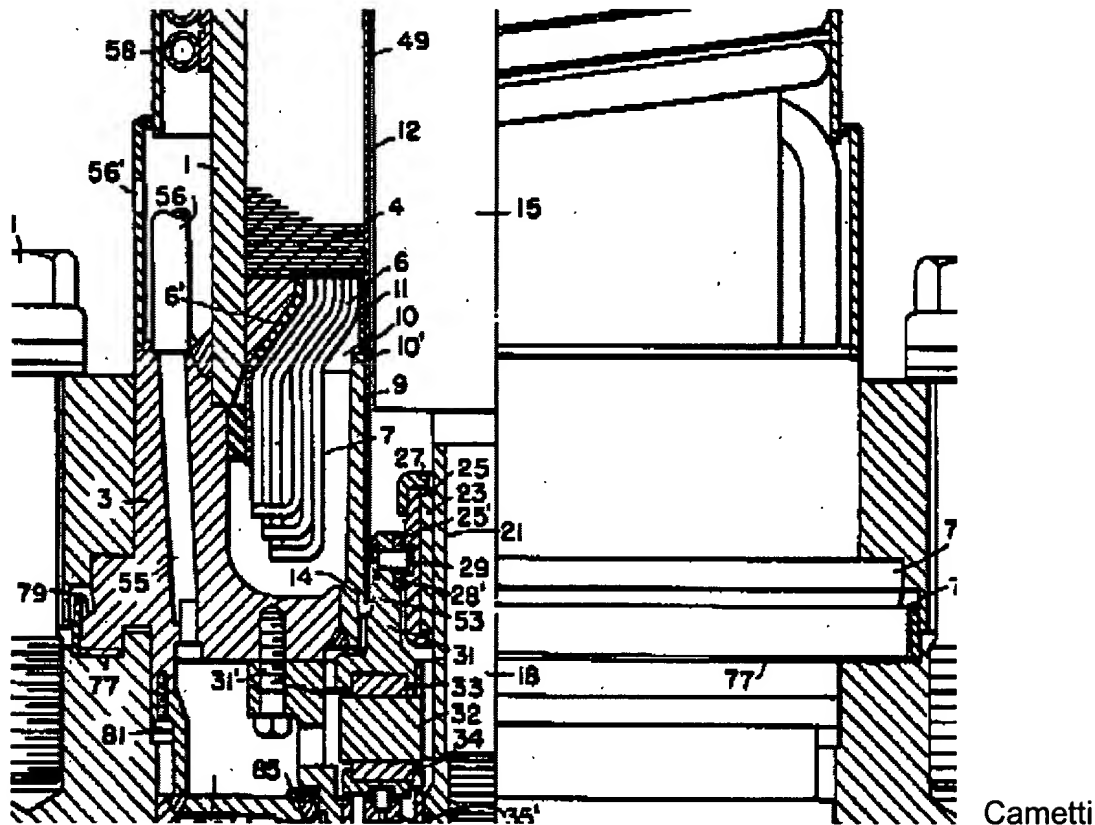
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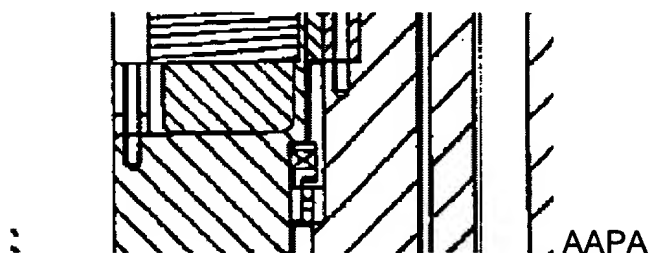
The Applicant's argument that AAPA and Cametti and Hofmeister fail to teach the partition wall between the reinforcing means and the motor rotor is not persuasive. The reinforcement means shown above (figure 7 of the AAPA), shows the partition wall expanding when exiting the air gap between the stator and the rotor. This expanded portion is a reinforcement means is integrally formed with the partition wall and the housing. The partition wall is the inner radial surface of this portion of the housing, such that it is between the rotor (the rotational part of the motor which includes the shaft) and the reinforcement means. Additionally, Cametti teaches the partition wall 12 between

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the support 9 and the rotor 15 (See below).



The Applicant's argument regarding element 216a is not persuasive because that is not the reinforcement means. The AAPA reinforcement means is shown below.



It is equivalent to Cametti reinforcement means 8,9 except it is integrally formed with the partition wall and housing, while Cametti has separate components. The Applicant's argument regarding motivation to combine is not persuasive because Cametti is only relied upon to teach the material being non-magnetic and non-metallic stainless steel is

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corrosion resistant and is good for welding in a hermetically sealed motor (col. 3, lines 20-35). The examiner notes that caselaw clearly supports a person of ordinary skill in the art to choose the material for intended purposes (see *In re Leshin*, 125 USPQ 416). Cametti is only provided to show that the non-magnetic, non-metallic material is preferred in motor pumps.

ISSUE 4

Applicant's argument that Jacquin does not cure the deficiencies of AAPA, Cametti, and Hofmeister is not persuasive for the reasons set for above.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



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kit
August 17, 2004

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